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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/800,804 | 03/07/2001 | Aniouar Bjeoumikhov | 101215-205 | 5469 |
| 27387 7590 09/28/2007 NORRIS, MCLAUGHLIN & MARCUS, P.A. 875 THIRD AVE 18TH FLOOR NEW YORK, NY 10022 | | | EXAMINER KAO, CHIH CHENG G | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--|---|--|
| Office Action Summary | Application No. 09/800,804 | Applicant(s) BJEOUMIKHOV ET AL. | |
| | Examiner Chih-Cheng Glen Kao | Art Unit 2882 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 28, 2003, has been entered.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on March 7, 2000. It is noted, however, that applicant has not filed a certified copy of the 100 11 882.8 application as required by 35 U.S.C. 119(b).

Specification

3. The disclosure is objected to because of the following informalities. The specification refers to claims numerous times (see the last line of page 2, in particular), which may create discrepancies and new matter issues if future claim amendments were to be made. Therefore, the examiner suggests removing all references to the claims that are in the specification.

Appropriate correction is required.

Claim Objections

4. Claims 19-21 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 19, line 2; replacing “pollycapillary” with --polycapillary--).

Claims 20 and 21 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 25 been renumbered 28.

Claim Rejections - 35 USC § 112

6. Claims 12-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 12, the claim requires “wherein the focal length of each of said semi-lenses is changeable.” Although the specification enables one to change the focal length of the optical system, the specification does not describe how one changes the focal length of an individual semi-lens. Therefore, the claim is rejected for enablement issues. Claims 13-15 are rejected for the reasons above by virtue of their dependency.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Ban et al. (JP 02-287300).

Ban et al. discloses a method for focusing X-rays (title) for the realization of an X-ray-zoom optical system (fig. 1, #9 and 10) having a first semi-lens (fig. 1, #9) and a second semi-lens (fig. 1, #10) spaced apart from each other by a total distance, wherein said semi-lenses each necessarily have a focal length, said method comprising adjustably setting said total distance between said semi-lenses (fig. 1, via #11x and 13x); wherein the focal length of said optical system is necessarily changeable (fig. 1, via #11x and 13x).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. as applied to claim 12 above, and further in view of Verman et al. (US 6389100) and York et al. (US 5747821).

Ban et al. discloses a method as recited above.

However, Ban et al. fails to disclose reducing radiation losses between said semi-lenses through a cylindrical monicapillary.

Verman et al. teaches reducing radiation losses between semi-lenses (fig. 8, #24 and 28) through a cylindrical (col. 2, lines 57-59) monolens (fig. 8, #26). York et al. teaches using capillaries (title).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the method of Ban et al. with the reducing of Verman et al., since one would have been motivated to make such a modification for increasing the flexibility of the system (col. 3, lines 1-3) as shown by Verman et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the method of Ban et al. as modified above with the teachings of York et al, since one would have been motivated to make such a modification for increasing focusing precision (col. 1, lines 12-19) as shown by York et al.

Furthermore, since the Examiner finds that the prior art (i.e., Ban et al.) contained a “base” method upon which the claimed invention can be seen as an “improvement”, and since the Examiner finds that the prior art (i.e., Verman et al. and York et al.) contained a comparable method that was improved in the same way as the claimed invention, the Examiner thus finds that one of ordinary skill in the art could have applied the known “improvement” techniques in the same way to the “base” method and the results would have been predictable to one of ordinary skill in the art. Therefore, such a claimed combination is obvious and unpatentable.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. in view of Loxley et al. (WO 00/05727).

Ban et al. discloses a device for focusing X-rays (title) for the realization of an X-ray-zoom optical system (fig. 1, #9 and 10) comprising a first semi-lens (fig. 1, #9) and a second semi-lens (fig. 1, #10) opposite each other and spaced apart by a total distance, wherein said semi-lenses are adjustably arranged to each other with regard to said total distance (fig. 1, via #11x and 13x).

However, Ban et al. fails to disclose housing.

Loxley et al. teaches housing (pg. 7, lines 23-33).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Ban et al. with the housing of Loxley et al., since one would have been motivated to make such a modification for protection and reducing contamination via evacuation (pg. 7, lines 23-33) as shown by Loxley et al., which will increase efficiency of the optical system.

10. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. and Loxley et al. as applied to claim 16 above, and further in view of Verman et al. and York et al.

Ban et al. as modified above suggests a device as recited above.

However, Ban et al. fails to disclose reducing radiation losses between said semi-lenses through a cylindrical monocapillary.

Verman et al. teaches reducing radiation losses between semi-lenses (fig. 8, #24 and 28) through a cylindrical (col. 2, lines 57-59) monolens (fig. 8, #26). York et al. teaches using capillaries (title).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the reducing of Verman et al., since one would have been motivated to make such a modification for increasing the flexibility of the system (col. 3, lines 1-3) as shown by Verman et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the teachings of York et al, since one would have been motivated to make such a modification for increasing focusing precision (col. 1, lines 12-19) as shown by York et al.

Furthermore, since the Examiner finds that the prior art (i.e., Ban et al.) contained a “base” device upon which the claimed invention can be seen as an “improvement”, and since the Examiner finds that the prior art (i.e., Verman et al. and York et al.) contained a comparable device that was improved in the same way as the claimed invention, the Examiner thus finds that

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one of ordinary skill in the art could have applied the known “improvement” techniques in the same way to the “base” device and the results would have been predictable to one of ordinary skill in the art. Therefore, such a claimed combination is obvious and unpatentable.

11. Claims 13, 14, 19, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. and Loxley et al. as respectively applied to claims 12 and 16 above, and further in view of Silver et al. (US 5497008).

12. Regarding claim 13, Ban et al. as modified above discloses or suggests a method and device as recited above. Ban et al. further discloses capturing in a large solid angle, X-ray light emitted from a point source (fig. 1, at #1), and bundling said X-ray light to a beam (fig. 1, via #9), wherein said beam enters said second semi-lens (fig. 1, #10), and wherein said second semi-lens focuses (title) said beam on a point at a required distance (fig. 1, at #15).

However, Ban et al. fails to disclose bundling said X-ray light to a parallel beam.

Silver et al. teaches bundling X-ray light to a parallel beam (fig. 4; and col. 6, lines 28-38).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the method and device of Ban et al. with the parallel beam of Silver et al., since one would have been motivated to make such a modification for more easily varying the source to image distance instead of using a specific optical device each time a configuration is modified (col. 6, lines 28-38) as shown by Silver et al.

Furthermore, since the Examiner finds that the prior art (i.e., Ban et al.) contained a “base” method or device upon which the claimed invention can be seen as an “improvement”, and since the Examiner finds that the prior art (i.e., Silver et al.) contained a comparable method or device that was improved in the same way as the claimed invention, the Examiner thus finds that one of ordinary skill in the art could have applied the known “improvement” technique in the same way to the “base” method or device and the results would have been predictable to one of ordinary skill in the art. Therefore, such a claimed invention is obvious and unpatentable.

13. Regarding claims 14 and 19, Silver et al. further teaches wherein a second semi-lens is a polycapillary semi-lens (col. 6, lines 28-38).

14. Regarding claim 24, Ban et al. as modified above suggests a device as recited above. Loxley et al. further teaches wherein said housing (pg. 7, lines 23-33) necessarily includes a beam outlet end (for outputting X-rays).

However, Ban et al. fails to disclose elements attached to said beam outlet end of said housing, wherein said elements include a detector assembly group with a pre-amplifier having a solid geometry for analysis of a primary beam, and/or at least two optical point sources for determining a distance between excitation and measurement arrangement to a specimen surface, and/or a CCD-camera with an optical unit that allows for visual observation of said specimen surface.

Silver et al. teaches wherein elements include a detector assembly group with a pre-amplifier having a solid geometry for analysis of a primary beam (fig. 4, #16), and/or at least two

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optical point sources for determining a distance between excitation and measurement arrangement to a specimen surface, and/or a CCD-camera with an optical unit that allows for visual observation of said specimen surface.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the detector of Silver et al., since one would have been motivated to make such a modification for easier diagnosis (col. 1, lines 6-10) as implied from Silver et al.

It also would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with elements attached, since rearranging parts of an invention involves only routine skill in the art. One would have been motivated to make such a modification for making the system more compact.

15. Regarding claim 27, claim scope is not limited by claim language that does not limit a claim to a particular structure. Therefore, the claim recitations (i.e., “wherein inclination determines said distance between said outlet and said specimen surface”) have not been given patentable weight.

16. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al., Loxley et al., and Silver et al. as applied to claim 19 above, and further in view of Verman et al. and York et al.

Ban et al. as modified above suggests a device as recited above.

However, Ban et al. fails to disclose reducing radiation losses between said semi-lenses through a cylindrical monocapillary.

Verman et al. teaches reducing radiation losses between semi-lenses (fig. 8, #24 and 28) through a cylindrical (col. 2, lines 57-59) monolens (fig. 8, #26). York et al. teaches using capillaries (title).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the reducing of Verman et al., since one would have been motivated to make such a modification for increasing the flexibility of the system (col. 3, lines 1-3) as shown by Verman et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the teachings of York et al, since one would have been motivated to make such a modification for increasing focusing precision (col. 1, lines 12-19) as shown by York et al.

Furthermore, since the Examiner finds that the prior art (i.e., Ban et al.) contained a “base” device upon which the claimed invention can be seen as an “improvement”, and since the Examiner finds that the prior art (i.e., Verman et al. and York et al.) contained a comparable device that was improved in the same way as the claimed invention, the Examiner thus finds that one of ordinary skill in the art could have applied the known “improvement” techniques in the same way to the “base” device and the results would have been predictable to one of ordinary skill in the art. Therefore, such a claimed combination is obvious and unpatentable.

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17. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. and Loxley et al. as applied to claim 16 above, and further in view of Verman et al.

18. Regarding claim 22, Ban et al. as modified above suggests a device as recited above.

However, Ban et al. fails to disclose structural elements integrated in said housing for further beam manipulation.

Verman et al. teaches structural elements for further beam manipulation (fig. 1, #22).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the structural elements of Verman et al., since one would have been motivated to make such a modification for removing excess beams (col. 4, lines 13-29) as shown by Verman et al., which will make results better.

It also would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with elements integrated in housing, since rearranging parts of an invention involves only routine skill in the art. One would have been motivated to make such a modification for more protection of components or for making the system more compact.

19. Regarding claim 23, Ban et al. as modified above suggests a device as recited above. Verman et al. further discloses filters as absorbers for suppression of beam constituents (col. 4, lines 16-21).

However, Ban et al. fails to disclose suppressing long-wave beam constituents and K β - lines.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the above filtering ranges, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art (col. 4, lines 16-21) as shown by Verman et al., with results that one would have recognized as being predictable. One would have been motivated to make such a modification for removing components of the source beam that are not needed (col. 4, lines 13-29) as shown by Verman et al., which will make results better.

20. Claims 24, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. and Loxley et al. as applied to claim 16 above, and further in view of Ferrandino et al. (US 6345086).

21. Regarding claim 24, Ban et al. as modified above suggests a device as recited above. Loxley et al. further teaches wherein said housing (pg. 7, lines 23-33) necessarily includes a beam outlet end (for outputting X-rays).

However, Ban et al. fails to disclose elements attached to said beam outlet end of said housing, wherein said elements include a detector assembly group with a pre-amplifier having a solid geometry for analysis of a primary beam, and/or at least two optical point sources for determining a distance between excitation and measurement arrangement to a specimen surface,

and/or a CCD-camera with an optical unit that allows for visual observation of said specimen surface.

Ferrandino et al. teaches wherein elements include a detector assembly group with a pre-amplifier having a solid geometry for analysis of a primary beam, and/or an optical point source for determining a distance between excitation and measurement arrangement to a specimen surface (fig. 1, #113), and/or a CCD-camera with an optical unit that allows for visual observation of said specimen surface.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the optical point source of Ferrandino et al., since one would have been motivated to make such a modification for better positioning accuracy (col. 6, lines 1-7) as shown by Ferrandino et al.

Furthermore, since the Examiner finds that the prior art (i.e., Ban et al.) contained a “base” device upon which the claimed invention can be seen as an “improvement”, and since the Examiner finds that the prior art (i.e., Ferrandino et al.) contained a comparable device that was improved in the same way as the claimed invention, the Examiner thus finds that one of ordinary skill in the art could have applied the known “improvement” technique in the same way to the “base” device and the results would have been predictable to one of ordinary skill in the art. Therefore, such a combination is obvious.

It also would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with elements attached, since rearranging parts of an invention involves only routine skill in the art. One would have been motivated to make such a modification for making the system more compact.

In addition, it would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with two optical points sources, since mere duplication of parts of a device involves only routine skill in the art, with results that were predictable and therefore obvious. One would have been motivated to make such a modification for increasing the accuracy of measurements by measuring with two devices instead of just one.

22. Regarding claim 28, Ferrandino et al. further teaches wherein said optical point source is a laser (col. 4, lines 15-16).

23. Regarding claim 29, Ban et al. as modified above suggests a device as recited above.

However, Ban et al. fails to disclose wherein said two optical point sources can be adjustably set.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with adjustable sources, since the provision of adjustability, where needed, involves only routine skill in the art. One would have been motivated to make such a modification for ensuring that the sources are pointed at the right area.

24. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. and Loxley et al. as applied to claim 16 above, and further in view of Sangster (US 2876650).

Ban et al. as modified above suggests a device as recited above. Loxley et al. further discloses wherein said housing (pg. 7, lines 23-33) necessarily includes a multi-port (for inputting and outputting X-rays).

However, Ban et al. fails to disclose a rotary mechanism for altering distance, wherein said rotary mechanism interacts with high-precision threads.

Sangster teaches a rotary mechanism for altering distance, wherein said rotary mechanism interacts with high-precision threads (fig. 1, #28 or 32).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the device of Ban et al. as modified above with the threads of Sangster, since one would have been motivated to make such a modification for easier and more accurate adjusting (col. 1, lines 35-58) as shown by Sangster.

Response to Arguments

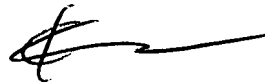
25. Applicant's arguments with respect to claims 12-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Chih-Cheng Glen Kao
Primary Examiner
Art Unit 2882